## ARCHÆOLOGY AT AVEBURY.

*A Guide to Avebury and Neighbourhood.* By R. H. Cox. Pp. 68. (London: E. Stanford, 1909.) Price 2*s*. net.

"A GUIDE to Avebury"—a fascinating title, giving hope of a learned speculation as to the uses of this, the most stupendous work of ancient times in this island. Was it within the circle of this great earthwork that the astronomer-priests conducted their observations, and was the great bank thrown up to form an artificial horizon to mark the lapse of time and change of season by the movements of the sun and stars, or was it simply to veil the mysteries and maintain the secrecy of the rites of a dominant priesthood, on whom the people, in those days before almanacs were thought of, were dependent for instructions when to sow and when to carry out any other of the operations of agriculture or of life that are subject to the seasons for their accomplishment? But no! there is little upon these questions to be found in this "Guide," which gives, indeed, a sort of general introduction to the study of the ancient remains in and around Avebury, and catalogues the camps, the tumuli and the trackways to be found in a long excursion from Barbury Castle round by Oldbury Castle, Oliver's Camp, St. Ann's Hill, Rybury, and Martinsell to Marlborough, but we look in vain for any real conception of the grandeur and mystery of the place.

The maps are a feature of the book, but they are difficult to understand; on p. 22, for instance, there is nothing to show what the red lines mean, and the red spots marking tumuli and camps cannot be distinguished, and do not by their size in any way indicate which are the more important; then there are only two indications of sarsen stones, the northern labelled "Grey wethers," and we wonder if the author has ever seen the vast sea of sarsen stones near "Glory Ann" and "Totterdown."

On p. 44 we are informed that near Urchfont is the watershed between the head-waters of the Wiltshire Avon and the "Stour," an extraordinary statement, as the Stour rises some thirty miles away to the south-west, and the waters from Urchfont (Hart's fount) flow into the Bristol Avon.

On p. 53 we have the statement that the West Kennet Long Barrow is now taken over by H.M.'s Board of Works, and on the same page the author writes of it as "the Government's long barrow," all of which is pure imagination, as the barrow is no more the property of the Government than is Silbury Hill or Avebury. These inaccuracies make us chary of accepting the author's statements, but they are insignificant compared with Lord Avebury's statement on p. 6 that the earth and chalk from the ditch have been thrown up on the *inner* side, whereas, of course, the curious fact at Avebury is that the bank is on the outside of the ditch.

As the author makes no mention of the late Rev. A. C. Smith's "British and Roman Antiquities of North Wiltshire," we presume he does not know the book or the elaborate maps contained in it, showing every road and trackway, every camp, tumulus, or sarsen stone that exists, or of which there is tradition, in the 100 square miles round Avebury, and we venture to think a careful study of it would have been useful to the author.

We hoped, when the delving archæologists were collected at Avebury this summer, that something might be done to protect the most interesting relic of all—the two remaining stones of the "cove" of the northern circle—but apparently the use of these stones as protection for a hayrick was deemed quite appropriate.

R. H. C.

## VENOMS AND ANTI-VENOMS.

*Venoms, Venomous Animals, and Anti-venomous Serum-therapeutics.* By Dr A. Calmette. Translated by E. E. Austen. Pp. xvi+403. (London: John Bale, Sons, and Danielsson, Ltd., 1908.) Price 15*s*. net.

WHATEVER may be thought of their reputed powers in other directions, there is no question of the peculiar fascination exercised by snakes upon the popular imagination, so that a translation of a work by Prof. Calmette, whose name in all that relates to snake-venoms and antivenoms is familiar in men's mouths as household words, is certain to command attention.

The volume consists of five rather unequal parts, dealing respectively with the classification, habits, and geographical distribution of poisonous snakes; the chemistry and physiology of snake-venom; immunisation, and the preparation of antivenoms; the venoms of various classes of animals other than Ophidia; and records and results of numerous cases of snake-bite treated with the author's antivenin.

The book is addressed particularly to medical men, naturalists, travellers, and explorers, and the author believes that physiologists also may read it with profit. Its value to the physiologist is diminished by the fact that, as a summary of our knowledge, its design is hardly catholic enough; but that it will prove of very great service to the medical man, and particularly to the medical officer stationed in the tropics, there can be no two opinions. For just those things that the medical man wants to know, and the medical officer is expected to know, about snakes—what venomous species he is likely to encounter in his own province, how those species may be recognised, how their various venoms manifest their action and to what degree they are dangerous, and on what rational principles the treatment of snake-bite is based—are here to his hand in a single volume of convenient size and of moderate price.

The first part of the book, which deals with poisonous snakes from the systematic and geographical points of view, may be described as a condensed extract of the British Museum Catalogue, leavened with remarks on habits, and finely flavoured with well-chosen figures. The British Museum Catalogue, which itself is a marvel of conciseness, does not lend itself to condensation of this sort, but the figures in this instance make it good. What one

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misses, in a book meant for medical men and travellers, are good, plain descriptions and diagrams giving the names and explaining the relations of all those parts of the snake's skeleton and integument that are of applied value in classification. Here there are descriptions and figures, but they do not explain *all* the terms employed in the specific and generic diagnoses; moreover, some of the terms used are not those commonly current, and some do not correspond in text and figure. Thus the well-known quadrate bone is referred to as the tympanic; and the shields which in the text are called, in accordance with the authorised British version, internasal, prefrontal, frontal, and parietal, appear in the figure under other names. Seeing that the differentiation of species, and even of genera, largely depends upon scale-characters, this is hardly a matter of little moment.

The second part, which treats of snake-venoms, describes the methods of collecting venom and the chemical composition of the secretion, and gives an account of the way in which in the laboratory the various constituents of the venom act upon the blood and tissues. The gross effects of cobra-bite and viper-bite are also contrasted. The author naturally draws largely on his own experiments, but the work of other investigators is duly considered. It is rather surprising, however, not to find any mention whatever of D. D. Cunningham, who for many years was in India the observed of all observers in this field.

The third part brings us to the cream of the subject, namely, the acquisition of immunity against snake-venom and the use of the serum of immunised animals as a cure for snake-bite. This subject is so largely the author's own that criticism can only be offered with deference. But, considering merely the way in which the matter is represented in the book under review, the author appears to rely rather too much on his own large experience with cobra-venom, and also to be hardly consistent; for although he seems to adhere to the untenable opinion that neurotoxin is the essential toxic constituent of *all* venoms, whether colubrine or viperine, he allows that cobra-antivenin is of no avail against what, by a strain of language, he calls the "local" effects of viperine venom, and he concedes the practical point that an antivenin of general efficacy can only be obtained from an animal that has been immunised against *both* kinds of venom, colubrine and viperine.

The only other part of the book that requires notice is that concerned with the venoms of animals other than snakes. Here we find many interesting fragments of information about the venom of polyps, sea-urchins, arthropods, molluscs, fishes, and amphibia. The venomous Mexican lizard, Heloderma, and the spur and femoral gland of Ornithorhynchus are also remembered, but, strange to tell, the dreadful sting-rays, the notorious jelly-fishes, and the molluscan Toxiglossa are quite forgotten.

As to Mr. Austen's translation, it is as near as possible perfect, being wonderfully faithful to the original, and yet, so far as technical terms do not interfere, good English. In the case of some of the technical terms, however, Mr. Austen's unflinching fidelity sometimes goes near to make the reader wince. There are expressions, such as "gingival fold," "ergastoplasmic venogen," "sanguinolent serosity," "laccate," "chloridate," "asporogenous," to which even the hardest-mouthed jargonmonger will object.

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## THE SCOTTISH LAKE SURVEY.

*Bathymetrical Survey of the Fresh-water Lochs of Scotland.* Under the Direction of Sir John Murray, K.C.B., F.R.S., and Laurence Pullar. Pp. viii+288; maps and plates. (London: Royal Geographical Society, and Edward Stanford, 1908.)

IN some countries it appears so natural that the national surveys should present a complete delineation of the solid surface of the land that the accident of certain hollows being filled with water does not excuse the surveyor from continuing his contour lines across the submerged slopes. With us, however, until the Survey Department was supplied with the necessary data by private investigators, no sub-lacustrine contour lines appeared even on maps of the largest scale, and large surfaces of paper remained blank save for the artistically graduated lines which indicated the difference between a water and a land surface. Most of the English lakes were surveyed in 1893 and 1894, and the contour lines appear on the later editions of the six-inch maps, with due acknowledgment of the source whence they were derived.

The volume now before us completes the preliminary publication of the survey of the lakes of Scotland undertaken by Sir John Murray and Mr. Pullar in 1896, and now brought very near completion. It represents an immense amount of work of national importance carried out at the personal cost of the authors, and its very magnitude makes it impossible to give any serviceable summary here of the additions to limnology it contains. Eighteen papers appeared in the *Geographical Journal* between 1900 and 1908, illustrated by bathymetrical maps of 213 fresh-water lochs, and this volume, published separately by the Royal Geographical Society, gives particulars and bathymetrical maps of a further series of 349 lochs, making a total of 562 surveyed and described. The number is so great that we cannot help regretting that it has not been made complete, but the rule appears to have been that no steps were taken to survey those lochs on which a boat was not available. In this way some sheets of water of considerable size and great interest have been left unsounded, a fact the more regrettable because difficulties due to sporting rights in some of the nearly inaccessible valleys in the heart of the great deer forests may prove insuperable to less known investigators in the future, while the high distinction of Sir John Murray's name might possibly have smoothed a way in the course of his great survey.

Apart from this, the record of the Loch Survey is one that Sir John Murray, Mr. Pullar and their numerous assistants may well be proud of. How great a body of work it represents may in part be gathered from the complete index, which includes all lakes described here and in the articles which have appeared in the *Geographical Journal*; but a mass of additional

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